

Bellwork: 5/29/13

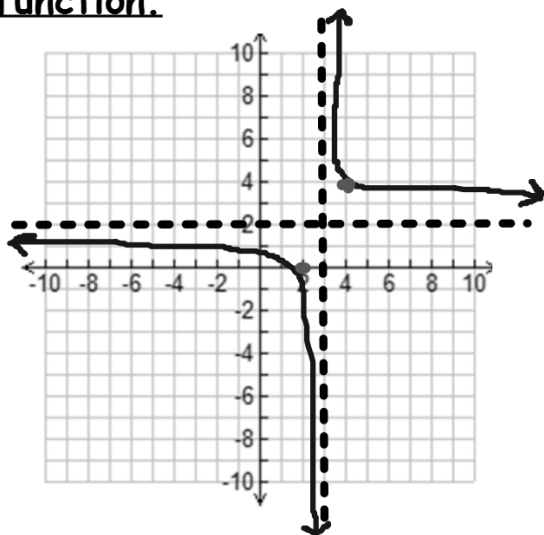
**Write the polynomial
given the zeroes:**

$$x = 0, 1, -3$$

**Given that one zero of
 $f(x) = x^3 + 9x^2 + 23x + 15$
is -5. What are the other TWO
zeroes.**

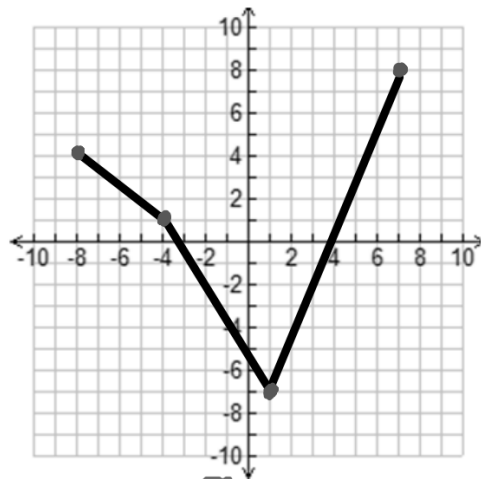
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Write the equation of the function.



$$y = \frac{2}{(x-3)^2} - 2$$

Find the domain & range



$$D: [-8, 7]$$
$$R: [-7, 8]$$

7.5 - Using Logarithms to solve exponential equations

Objective: Use logarithms to solve exponential equations

Using logarithms to solve exponential equations:

- Steps:
- 1) isolate the exponential term on one side of the equation
 - 2) write the word log in front of each term on each side of the equation
 - 3) use the exponent properties to rewrite the expression
 - 4) solve for x

Example 1: $5^x = 75$

$$\begin{aligned} \checkmark \log 5^x &= \log 75 \\ (x) \log 5 &= \log 75 \\ \frac{(x) \log 5}{\log 5} &= \frac{\log 75}{\log 5} \\ X &= 2.68 \end{aligned}$$

Example 2: $7^{x+1} = 150$

$$\begin{aligned} \checkmark \log 7^{(x+1)} &= \log 150 \\ (x+1) \log 7 &= \log 150 \\ \frac{(x+1) \log 7}{\log 7} &= \frac{\log 150}{\log 7} \\ x+1 &= 2.57 \\ \frac{x+1}{1} &= \frac{2.57}{1} \\ X &= 1.57 \end{aligned}$$

Try These:

1) $6^x = 1296$

$$x = 4$$

2) $4^{x+1} = 100$

$$x = 2.32$$

3) $2^{x-3} = 25$

$$x = 7.64$$

4) $5^{3x-1} = 49$

$$x = 1.14$$

$$\textcircled{11} \quad \frac{9^{n+10}}{-3} + \frac{3}{-3} = \frac{81}{-3}$$

$$9^{n+10} = 78$$

$$\downarrow \log 9^{(n+10)} = \log 78$$

$$\frac{(n+10) \log 9}{\log 9} = \frac{\log 78}{\log 9}$$

$$\frac{n+10}{-10} = \frac{1.98}{-10}$$

$$\boxed{n = -8.02}$$

$$\textcircled{9} \quad \frac{5 \cdot 18^{\log x}}{5} = \frac{26}{5}$$

$$18^{\log x} = 5.2$$

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p. 39 - #1 - #10; not 10